

① multiply $(3x - 4)(2x + 5)$

	$3x$	-4
$2x$	$6x^2$	$-8x$
$+5$	$15x$	-20

$$6x^2 - 8x + 15x - 20$$

$$6x^2 + 7x - 20$$

$\frac{1}{2} \text{pt}$ $\frac{1}{2} \text{pt}$ $\frac{1}{2} \text{pt}$

$\frac{1 \text{pt}}{2} \rightarrow \text{work}$

② Factor $2x^2 + 18x + 28$

1.2

1.28
2.14
4.7

OR $(2x + 4)(x + 7)$

OR $(2x + 14)(x + 2)$

OR $2(x + 2)(x + 7)$

1 pt each
group

③ Find the minimum (vertex) $y = 2x^2 - 8x + 4$



$$x = \frac{-b}{2a} \rightarrow \frac{-(-8)}{2(2)} = \frac{8}{4} = \underline{\underline{2}}$$

$$y = 2(2)^2 - 8(2) + 4$$
$$8 - 16 + 4 = \underline{\underline{-4}}$$

$(2, -4)$
↑ ↑
pt pt

④ Solve for x , $2(x+4)^2 - 32 = 0$
 $\quad\quad\quad + 32 \quad + 32$

$$\begin{array}{rcl} x & & 0 \\ + 4 & & + 32 \\ \text{sq} & & \div 2 \\ \cdot 2 & & \sqrt{} \\ - 32 & & - 4 \\ = 0 & & = x \end{array}$$

$$\frac{2(x+4)^2}{2} = \frac{32}{2}$$

$$\sqrt{(x+4)^2} = \sqrt{16}$$

$$x+4 = \pm 4$$

$$\begin{array}{cc} -4 & -4 \end{array}$$

$x = 0, -8$

\nearrow
 $1p^+$

\nearrow
 $1p^+$

⑤ Find the x-intercepts, $y = 3(x-4)(x+2)$
 $y = 0$

$$0 = 3(x-4)(x+2)$$

↓ ↓
4 -2

$x = -2, 4$

↑ ↑
1pt 1pt.

No
Switch
1pt.

$(2, 3) (3, 13) (4, 29)$

X	Y
2	3
3	13
4	29

$$y = ax^2 + bx + c$$

$$3 = a(2)^2 + b(2) + c$$

$$13 = a(3)^2 + b(3) + c$$

$$29 = a(4)^2 + b(4) + c$$

$$4a + 2b + c = 3$$

$$9a + 3b + c = 13$$

$$16a + 4b + c = 29$$

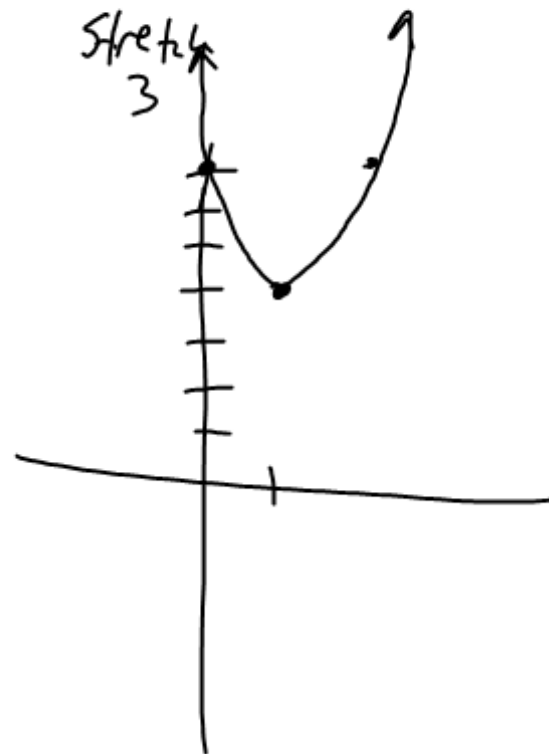
$$y = 3x^2 - 5x + 4$$

$$\begin{bmatrix} 4 & 2 & 1 \\ 9 & 3 & 1 \\ 16 & 4 & 1 \end{bmatrix} \cdot \begin{bmatrix} a \\ b \\ c \end{bmatrix} = \begin{bmatrix} 3 \\ 13 \\ 29 \end{bmatrix}$$

A X = B

$$A^{-1} \cdot B = \begin{bmatrix} 3 \\ -5 \\ 1 \end{bmatrix}$$

$$y = 3(x-1)^2 + 4$$



Sec. 5.1 #24

5.2 #20, 21, 24

5.3 #3, 34, 51, 52

5.4 #25-36 (2)